AQA – Ratio, proportion and rate of change – GCSE 2022 Mathematics

1. June/2022/Paper_8300/1F/No.7

	Cost of 100 grams
Cereal	49p
Pasta	14p

Leah buys 400 grams of cereal and 250 grams of pasta.

Work out the **total** cost in £

[4 marks]

_____

_____

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_____

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_____

_____

Answer £ _____

AQA – Ratio, proportion and rate of change – GCSE 2022 Mathematics

2. June/2022/Paper_8300/1F/No.10

(a) Here is a triangle.

Not drawn
accurately

1.2 m

1 m

40 cm
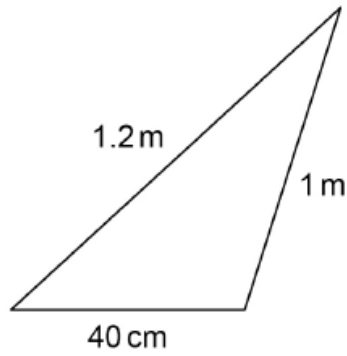
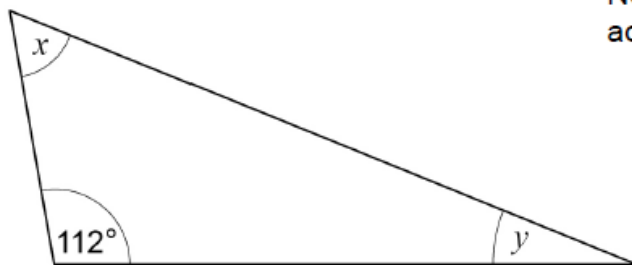Work out $\dfrac{\text{length of shortest side}}{\text{length of longest side}}$

Give your answer as a fraction in its simplest form.

[2 marks]

_____

_____

_____

_____

_____

Answer _____

(b) Here is a different triangle.

Not drawn accurately

$x = 3y$

Work out the size of angle y.

[3 marks]

_____

_____

_____

_____

_____

$y = $ _____ °

3. June/2022/Paper_8300/1F/No.11

Companies A and B sell insurance for mobile phones.

The table shows the **monthly** costs for two types of cover, Damage and Loss.

Company	Damage	Loss
A	£8.65	£12.20
B	£7.25	£14.10

(a)   Work out the difference in monthly cost for the two types of cover with **Company A**.

[2 marks]

Answer £ _____

(b)   Ben wants Damage cover with **Company B**.

How much in total will he pay for one **year**?
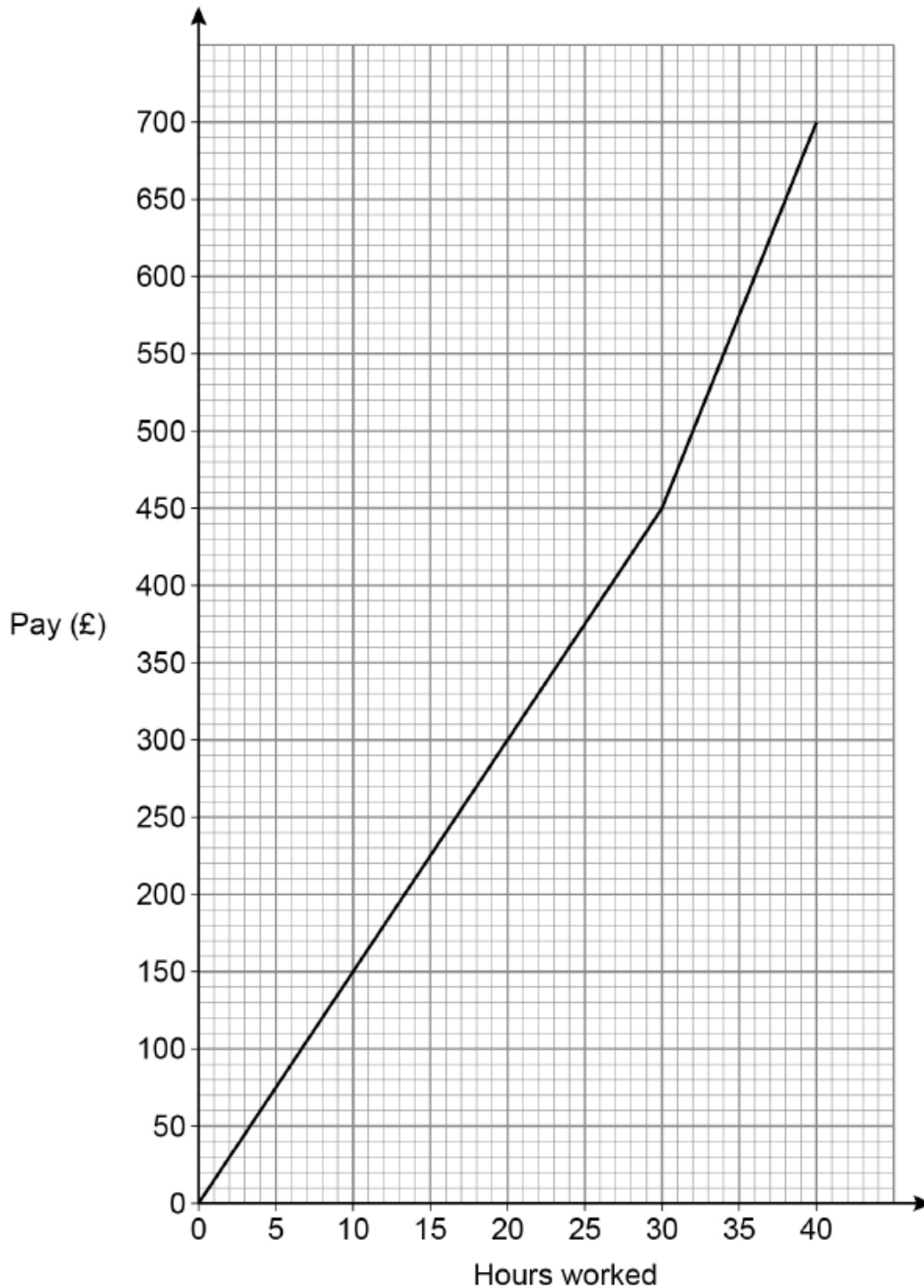
[3 marks]

Answer £ _____

4

4. June/2022/Paper_8300/1F/No.22

In a week, Samir is paid

a basic hourly rate for the first 30 hours worked

an overtime hourly rate for any extra hours worked.

The graph shows his pay for working up to 40 hours in a week.

Work out the ratio   basic hourly rate : overtime hourly rate

Give your answer in its simplest form.

[3 marks]

_____

_____

_____

_____

_____

Answer _____ : _____

(a)   In each box, write a fraction **less** than 1 to make a correct calculation.

[1 mark]

$$\boxed{\over} \times \boxed{\over} = \frac{3}{10}$$

(b)   In each box, write a decimal **less** than 1 to make a correct calculation.

[1 mark]

$$\boxed{} \times \boxed{} = 0.06$$

5. June/2022/Paper_8300/1F/No.28

$x : y$ is $9 : 5$

Circle the value of $\dfrac{2x}{y}$

[1 mark]

$$\dfrac{5}{18} \qquad\qquad \dfrac{18}{5} \qquad\qquad \dfrac{9}{10} \qquad\qquad \dfrac{10}{9}$$
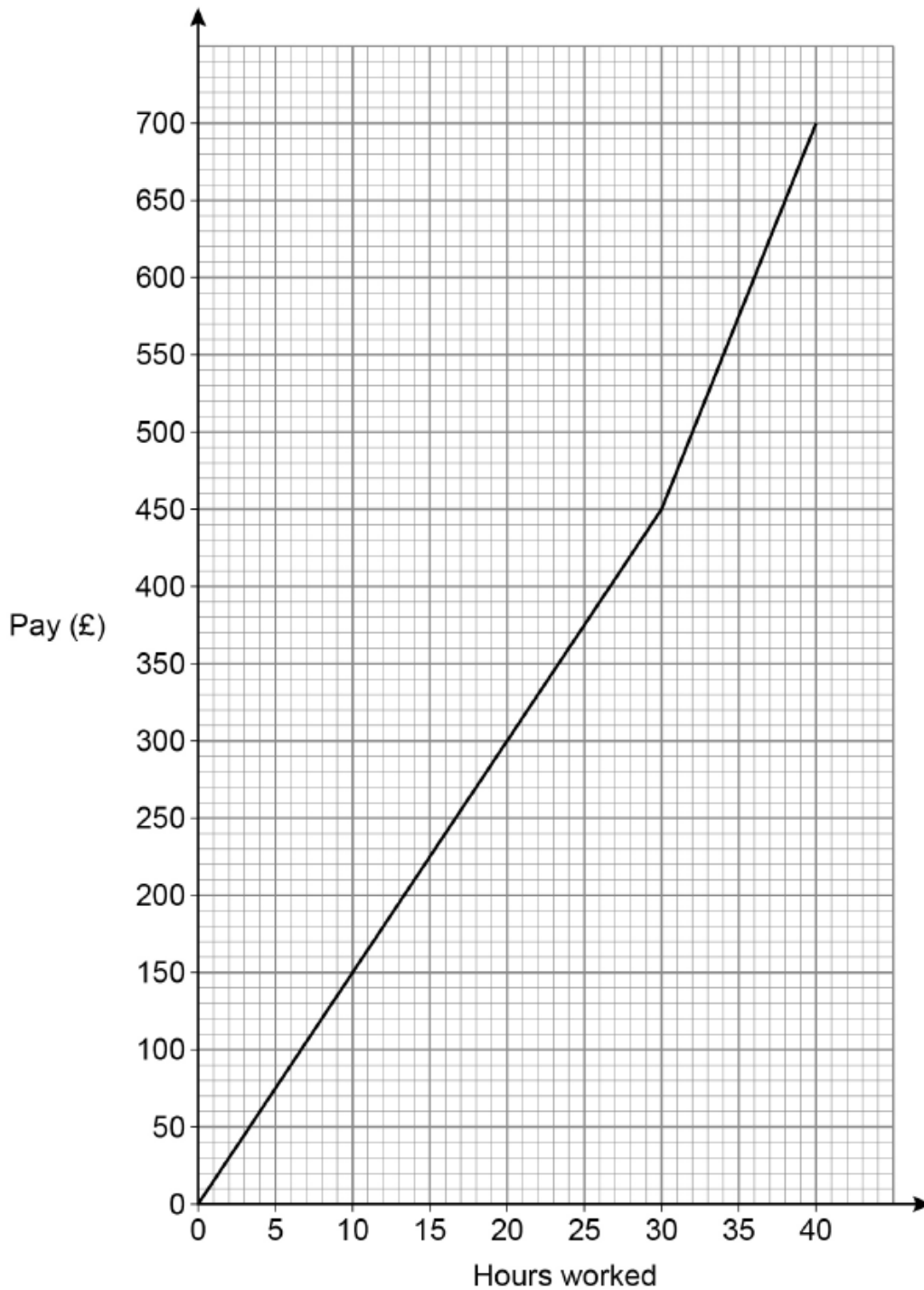
6. June/2022/Paper_8300/1H/No.8

In a week, Samir is paid

       a basic hourly rate for the first 30 hours worked

       an overtime hourly rate for any extra hours worked.

The graph shows his pay for working up to 40 hours in a week.

Work out the ratio   basic hourly rate : overtime hourly rate

Give your answer in its simplest form.

[3 marks]

_____

_____

_____

_____

_____

Answer _____ : _____

7.

15 workers can complete a job in 8 days.

How many **more** workers are needed to complete the job in 6 days?

Assume that all of the workers work at the same rate.
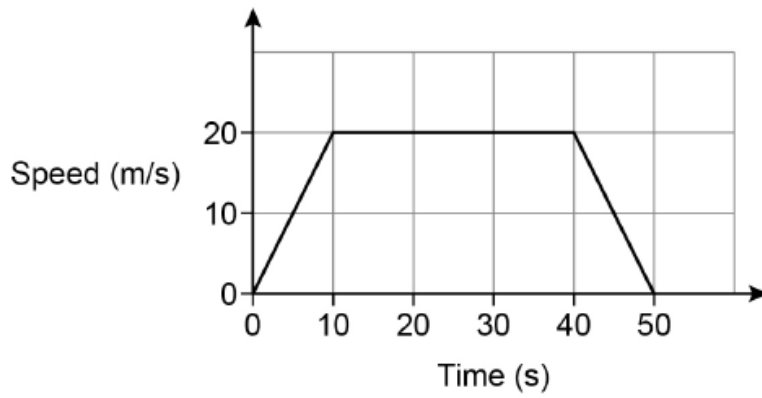
[3 marks]

_____

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_____

_____

_____

_____

Answer _____

8. June/2022/Paper_8300/1H/No.25

Here is the speed-time graph for a 50-second journey.

(a) Circle the acceleration, in m/s^2, halfway through the journey.

[1 mark]

0   2   20   25

(b) Work out the total distance travelled.

[2 marks]

_____

_____

_____

_____

_____

Answer _____ m

10